UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,506	07/28/2000	Theodore S. Rappaport	02560028AA	3783

30743 7590 09/29/2004

WHITHAM, CURTIS & CHRISTOFFERSON, P.C.
11491 SUNSET HILLS ROAD
SUITE 340
RESTON, VA 20190

EXAMINER	
ZHOU, TING	

ART UNIT	PAPER NUMBER
2173	

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/628,506	RAPPAPORT ET AL.	
	Examiner	Art Unit	
	Ting Zhou	2173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-121* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-121* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 July 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3,5 and 6*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The abstract is objected to as being too long in length. It is advised that the applicant amend the abstract to fall within the 50 to 150 word limit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-121 are rejected under 35 U.S.C. 103(a) as being unpatentable over "SMT Plus 1.0 User's Manual", authored by Skidmore et al., and Barnard U.S. Patent 6,456,938.

Referring to claim 1, Skidmore et al. teach a computerized system comprising a computer generated model of a physical environment in which a communications network is or will be deployed (displaying a site map to assist a user in planning for wireless communications systems in indoor environments) (Skidmore et al.: page 2, first and second paragraph and further shown

in Figure 4.2), the computer generated model providing a three-dimensional representation of locations of components within the physical environment (the computer displays a three dimensional floor plan of a configuration of a communications network in a building which includes a plurality of components that can be used in the network, such as base stations and interference sources, the model containing a height parameter, such as the ceiling height and height above floor, giving the model a third dimension) (Skidmore et al.: pages 2, first and second paragraphs, pages 10 and 21-22, and further shown in Figures 4.2 and 5.1); a server computer or computers for running a computer program which generates the computer generated model (the computer runs the SMT Plus program to create the floor plan model shown in Figure 4.2) (Skidmore et al.: pages 2 and 25); However, Skidmore et al. fail to explicitly teach a portable computer which acts as a client to the server. Barnard teaches a system for displaying a model of a physical environment (displaying a map of a golf course) similar to that of Skidmore et al. In addition, Barnard further teaches at least one portable computer which acts as a client to the server (multiple palm-held portable computers can act as clients to a remote server computer by an ongoing process of map modification and exchange with other computers systems and remote servers) (Barnard: column 5, lines 21-29 and column 6, lines 34-37); means for downloading and storing at least a portion of the computer generated model from the server to the portable computer for displaying the model on the portable computer (the palm-held portable device can download maps from a remote server) (Barnard: column 5, lines 21-29 and column 16, lines 51-67 through column 17, lines 12-15), and a display associated with the portable computer for displaying the computer model (Barnard: Figures 1 and 4). It would have been obvious to one of ordinary skill in the art, having the teachings of Skidmore et al. and Barnard

before him at the time the invention was made, to modify the system for displaying a three dimensional model of a physical environment taught by Skidmore et al. to include the portable computer capable of downloading information from a server of Barnard. One would have been motivated to make such a combination in order to facilitate user collaboration through easy modification and sharing of data; furthermore, users would have the added convenience of being able to receive data from and communicate data to other computer systems while they are traveling or away from the server system. This combination allows easy and fast synthesizing and synchronization of information between remote computer systems.

Referring to claim 13, Skidmore et al. teach a computerized system comprising a computer generated model of a physical environment in which the communications network is or will be deployed (displaying a site map to assist a user in planning for wireless communications systems in indoor environments) (Skidmore et al.: page 2, first and second paragraph and further shown in Figure 4.2), the computer generated model providing a representation of locations of components within the physical environment (the computer displays a floor plan of a configuration of a communications network in a building which displays a plurality of components, such as base stations and interference sources, at particular locations) (Skidmore et al.: page 9 and pages 21-23, section 4.4, and further shown in Figure 4.2), and wherein the computer generated model provides for performance prediction of the communications network based on factors selected from the group consisting of choice of components to be used within the environment, choice of locations for the components with the environment, and orientation of the components at the locations (the floor plan can be simulated to predict performance such as coverage contours; the simulation results vary depending upon the number and location of base

stations and coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4); and a server computer or computers for running a computer program which generates the computer generated model (the computer runs the SMT Plus program to create the floor plan model shown in Figure 4.2) (Skidmore et al.: pages 2 and 25). However, Skidmore et al. fail to explicitly teach a portable computer which acts as a client to the server. Barnard teaches a system for displaying a model of a physical environment (displaying a map of a golf course) similar to that of Skidmore et al. In addition, Barnard further teaches at least one portable computer which acts as a client to the server (multiple palm-held portable computers can act as clients to a remote server computer by an ongoing process of map modification and exchange with other computers systems and remote servers) (Barnard: column 5, lines 21-29 and column 6, lines 34-37); means for downloading and storing at least a portion of the computer generated model from the server to the portable computer for displaying the model on the portable computer (the palm-held portable device can download maps from a remote server) (Barnard: column 5, lines 21-29 and column 16, lines 51-67 through column 17, lines 12-15), and a display associated with the portable computer for displaying the computer model (Barnard: Figures 1 and 4). It would have been obvious to one of ordinary skill in the art, having the teachings of Skidmore et al. and Barnard before him at the time the invention was made, to modify the system for displaying a three dimensional model of a physical environment taught by Skidmore et al. to include the portable computer capable of downloading information from a server of Barnard. One would have been motivated to make such a combination in order to facilitate user collaboration through easy modification and sharing of data; furthermore, users would have the added convenience of being able to receive data from and communicate data to

other computer systems while they are traveling or away from the server system. This combination allows easy and fast synthesizing and synchronization of information between remote computer systems.

Referring to claim 28, Skidmore et al. teach a computerized system comprising a computer generated model of a physical environment in which the communications network is or will be deployed (displaying a site map to assist a user in planning for wireless communications systems in indoor environments) (Skidmore et al.: page 2, first and second paragraph and further shown in Figure 4.2), the computer generated model providing a representation of locations of components within the physical environment (the computer displays a floor plan of a configuration of a communications network in a building which displays a plurality of components, such as base stations and interference sources, at particular locations) (Skidmore et al.: page 9 and pages 21-23, section 4.4, and further shown in Figure 4.2); a server computer or computers for running a computer program which generates the computer generated model (the computer runs the SMT Plus program to create the floor plan model shown in Figure 4.2) (Skidmore et al.: pages 2 and 25); and means for measuring and inputting performance measurements within the physical environment (the user can input performance parameters, such as "Transmit Power", "RF Bandwidth", etc., in order to simulate the floor plan to predict performance such as coverage contours; the simulation results vary depending upon the number and location of base stations and coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4). However, Skidmore et al. fail to explicitly teach a portable computer which acts as a client to the server. Barnard teaches a system for displaying a model of a physical environment (displaying a map of a golf course) similar to that of Skidmore

et al. In addition, Barnard further teaches at least one portable computer which acts as a client to the server (multiple palm-held portable computers can act as clients to a remote server computer by an ongoing process of map modification and exchange with other computers systems and remote servers) (Barnard: column 5, lines 21-29 and column 6, lines 34-37); means for downloading and storing at least a portion of the computer generated model from the server to the portable computer for displaying the model on the portable computer (the palm-held portable device can download maps from a remote server) (Barnard: column 5, lines 21-29 and column 16, lines 51-67 through column 17, lines 12-15), and a display associated with the portable computer for displaying the computer model (Barnard: Figures 1 and 4). It would have been obvious to one of ordinary skill in the art, having the teachings of Skidmore et al. and Barnard before him at the time the invention was made, to modify the system for displaying a three dimensional model of a physical environment taught by Skidmore et al. to include the portable computer capable of downloading information from a server of Barnard. One would have been motivated to make such a combination in order to facilitate user collaboration through easy modification and sharing of data; furthermore, users would have the added convenience of being able to receive data from and communicate data to other computer systems while they are traveling or away from the server system. This combination allows easy and fast synthesizing and synchronization of information between remote computer systems.

Referring to claims 51 and 85, Skidmore et al. teach a computerized system and method comprising a computer generated model of a physical environment in which the communications network is or will be deployed (displaying a site map to assist a user in planning for wireless communications systems in indoor environments) (Skidmore et al.: page 2, first and second

paragraph and further shown in Figure 4.2), the computer generated model either or both (A) providing a three-dimensional representation of locations of components within the physical environment (the computer displays a three dimensional floor plan of a configuration of a communications network in a building which includes a plurality of components that can be used in the network, such as base stations and interference sources, the model containing a height parameter, such as the ceiling height and height above floor, giving the model a third dimension) (Skidmore et al.: pages 2, first and second paragraphs, pages 10 and 21-22, and further shown in Figures 4.2 and 5.1), or (B) providing a representation of locations of components within the physical environment, and wherein the computer generated model provides for performance prediction of the communications network based on factors selected from the group consisting of choice of components to be used within the environment, choice of locations for the components with the environment, and orientation of the components at the locations (the floor plan can be simulated to predict performance such as coverage contours; the simulation results vary depending upon the number and location of base stations and coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4); a server computer or computers for running a computer program which generates the computer generated model (the computer runs the SMT Plus program to create the floor plan model shown in Figure 4.2) (Skidmore et al.: pages 2 and 25). However, Skidmore et al. fail to explicitly teach a portable computer which acts as a client to the server. Barnard teaches a system for displaying a model of a physical environment (displaying a map of a golf course) similar to that of Skidmore et al. In addition, Barnard further teaches at least one portable computer which acts as a client to the server (multiple palm-held portable computers can act as clients to a remote server computer by an

ongoing process of map modification and exchange with other computers systems and remote servers) (Barnard: column 5, lines 21-29 and column 6, lines 34-37); means for downloading and storing at least a portion of the computer generated model from the server to the portable computer for displaying the model on the portable computer (the palm-held portable device can download maps from a remote server) (Barnard: column 5, lines 21-29 and column 16, lines 51-67 through column 17, lines 12-15), and a display associated with the portable computer for displaying the computer model (Barnard: Figures 1 and 4). It would have been obvious to one of ordinary skill in the art, having the teachings of Skidmore et al. and Barnard before him at the time the invention was made, to modify the system for displaying a three dimensional model of a physical environment taught by Skidmore et al. to include the portable computer capable of downloading information from a server of Barnard. One would have been motivated to make such a combination in order to facilitate user collaboration through easy modification and sharing of data; furthermore, users would have the added convenience of being able to receive data from and communicate data to other computer systems while they are traveling or away from the server system. This combination allows easy and fast synthesizing and synchronization of information between remote computer systems.

Referring to claims 2, 17, 37, 66 and 101, Skidmore et al., as modified, teach the portable computer is a hand-held computer (downloading maps from a remote server to a palm-held computer) (Barnard: column 16, lines 51-67 through column 17, lines 1-30 and Figures 1-2).

Referring to claims 3, 19, 39, 72 and 107, Skidmore et al. teach the three-dimensional representation is constructed from a collection of two-dimensional representations (two dimensional representations of floors of a floor plan can become a three-dimensional

representation by adjusting the height parameter, such as ceiling height, height above floor, etc., from zero to some height value, thus giving the representation a third dimension) (Skidmore et al.: page 10 and Figure 5.4).

Referring to claims 4, 20, 40, 73 and 108, Skidmore et al. teach the physical environment is a building and the three-dimensional representation includes at least one floor plan of the building (SMT Plus allows a user to display a floor plan of a building) (Skidmore et al.: page 2, second paragraph).

Referring to claims 5, 21 and 41, Skidmore et al., as modified, teach a plurality of floor plans for a plurality of floors in the building (a plurality of floors plans, i.e. the floor plans of a plurality of floors of a building, can be viewed at once) (Skidmore et al.: page 21, section 4.3), and wherein a portable computer (Barnard: column 5, lines 21-30 and column 6, lines 34-37) includes means for selecting specific floor plans of the plurality for displaying on the display (the user can move between different floors to view the different floor plans) (Skidmore et al.: page 10 and pages15-17, section 3.4).

Referring to claims 6, 22 and 42, Skidmore et al., as modified, teach the physical environment is a campus of buildings and the three dimensional representation includes at least one floor plan for each of a plurality of buildings in the campus (the user can select a plurality of buildings or environments to display its three dimensional floor plan) (Skidmore et al.: page 20 and page 25, section 5.1), and wherein the portable computer (Barnard: column 5, lines 21-30 and column 6, lines 34-37) includes means to select a building within the campus of buildings and to display the at least one floor plan for the building selected (the user can display any of a

plurality of floor plans for a plurality of buildings or environments by selecting and loading the desired floor plan) (Skidmore et al.: page 20 and page 25, section 5.1).

Referring to claims 7, 23 and 43, Skidmore et al. teach the three dimensional representation includes a plurality of floor plans for a plurality of floors for the building selected (Figure 4.2 shows a plurality of floor plans corresponding to a plurality of floors of a building). (Skidmore et al.: page 10 and pages 15-17, section 3.4).

Referring to claims 8, 24, 44, 76 and 111, Skidmore et al. teach the components are selected from the group consisting of base stations, base station controllers, amplifiers, attenuators, antennas, coaxial cabling, fiber optic cabling, connectors, splitters, repeaters, transducers, converters, couplers, leaky feeder cables, hubs, switches, routers, firewalls, power distribution lines, copper wiring, twisted pair cabling, and wireless access points (selecting base stations, antennas, interference sources, etc. to be placed on the floor plan) (Skidmore et al.: page 2, second paragraph and page 9).

Referring to claims 9, 16, 36, 77 and 112, Skidmore et al. teach the communications network includes wireless communication devices (such as base stations and interference sources) (Skidmore et al.: page 9).

Referring to claims 10, 25, 45, 78 and 113, Skidmore et al., as modified, teach the physical environment is an outdoor area (golf course) (Barnard: column 5, lines 21-30 and column 6, lines 34-37) having three dimensional topology and the three dimensional representation includes a representation of the three dimensional topology (the computer model contains a height parameter, such as the ceiling height and height above floor, which gives the model a third dimension) (Skidmore et al.: page 10 and Figure 5.4).

Referring to claims 11, 26 and 46, Skidmore et al., as modified, teach a position-tracking device is used to determine position within the physical environment (the palm-held portable device provides GPS location tracking features using a Position Module) (Barnard: column 5, lines 21-30 and column 12, lines 1-40).

Referring to claims 12, 27, 47, 67 and 102, Skidmore et al. teach the communication network components are maintained in a bill of materials (components of the network, such as floors of a building, are maintained as groups of partitioned layers) (Skidmore et al.: pages 16-17, section 3.4).

Referring to claims 14 and 34, Skidmore et al., as modified, teach a means for inputting changes to the at least a portion of the computer generated model on the portable computer which is downloaded from the server, and a means for uploading the changes to the server (the palm-held portable device provides capabilities to download, edit and upload maps from and to other computers, such as remote servers) (Barnard: column 5, lines 21-30, column 6, lines 34-37, and column 16, lines 51-67 through column 17, lines 1-30).

Referring to claims 15 and 35, Skidmore et al., as modified, teach a means for inputting changes to the factors for the at least a portion of the computer generated model on the portable computer which is downloaded from the server (the palm-held portable device downloads and edits a map) (Barnard: column 5, lines 21-30 and column 6, lines 34-37), and a means for outputting predicted performance parameters of the communications network based on the inputted changes on the display of the portable computer (the user can simulate and display predicted coverage contours after making changes such as adding/deleting/repositioning base

stations and interference sources) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claims 18, 38, 81 and 118, Skidmore et al. teach the representation displayed on the display is three-dimensional (the computer model contains a height parameter, such as the ceiling height and height above floor, which gives the model a third dimension) (page 10 and Figure 5.4).

Referring to claims 29 and 89, Skidmore et al., as modified, teach a means for uploading the performance measurements (such as component parameters and simulated coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4) from the portable computer to the server (uploading maps from the palm-held computer to other computers, such as remote servers) (Barnard: column 5, lines 21-30, column 6, lines 34-37 and column 16, lines 51-67 through column 17, lines 12-15).

Referring to claims 30, 33, 53 and 88, Skidmore et al., as modified, teach the means for measuring is a measurement device connected to the portable computer (the GPS receiver which measures the location/position, is connected to the display module) (Barnard: column 8, lines 39-58 and Figure 1).

Referring to claim 31, Skidmore et al., as modified, teach a means for downloading the performance measurements (such as component parameters and simulated coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4) from the server computer to the portable computer (downloading maps and map related information to the palm-held computer from a remote server) (Barnard: column 5, lines 21-30, column 6, lines 34-37 and column 16, lines 51-67 through column 17, lines 12-15).

Referring to claim 32, Skidmore et al., as modified, teach a means for uploading and downloading the performance measurements (such as component parameters and simulated coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4) from the portable computer to another computer which is different from the server (the palm-held computers can transmit maps, via uploading and downloading, from and to other palm-held computers, instead of a remote server) (Barnard: column 5, lines 21-30, column 6, lines 34-37 and column 16, lines 51-67 through column 17, lines 12-15).

Referring to claim 48, Skidmore et al., as modified, teach a means for inputting changes to the at least a portion of the computer generated model on the portable computer which is downloaded from the server (changing the parameters of components, such as base stations and interference sources, on the floor plan) (Skidmore et al.: page 9 and Figure 5.4), the means for inputting being positioned on the portable computer (users can use the palm-held device's controls to edit maps) (Barnard: column 5, lines 21-30 and column 6, lines 34-37), and a means for uploading the changes to another portable computer that is different than the server (the palm-held portable device provides capabilities to download, edit and upload maps from and to other palm-held computers, instead of the server) (Barnard: column 5, lines 21-30, column 6, lines 34-37, and column 16, lines 51-67 through column 17, lines 1-30).

Referring to claim 49, Skidmore et al., as modified, teach a means for inputting changes to at least a portion of the computer generated model on the portable computer which is downloaded from the server (the palm-held portable device downloads and edits a map) (Barnard: column 5, lines 21-30 and column 6, lines 34-37), the means for inputting being positioned on the portable computer (users can use the palm-held device's controls to edit maps)

(Barnard: column 5, lines 21-30 and column 6, lines 34-37), a means for uploading the changes to the server (the palm-held portable device provides capabilities to transmit maps and map-related information to and from the server) (Barnard: column 5, lines 21-30, column 6, lines 34-37, and column 16, lines 51-67 through column 17, lines 1-30) and a means for displaying and storing the changes at the server (when the user changes the computer model by adding/deleting/repositioning base stations and changing their parameter values, the corresponding changes are reflected on the displayed floor plan) (Skidmore et al.: page 9 and Figure 5.4).

Referring to claim 50, Skidmore et al., as modified, teach a means for inputting changes to at least a portion of the computer generated model on the portable computer which is downloaded from the server (the palm-held portable device downloads and edits a map) (Barnard: column 5, lines 21-30 and column 6, lines 34-37), the means for inputting being positioned on the portable computer (users can use the palm-held device's controls to edit maps) (Barnard: column 5, lines 21-30 and column 6, lines 34-37), a means for uploading the changes to another portable computer that is different than the server (the palm-held portable device provides capabilities to download, edit and upload maps from and to other palm-held computers, instead of the server) (Barnard: column 5, lines 21-30, column 6, lines 34-37, and column 16, lines 51-67 through column 17, lines 1-30) and a means for displaying and storing the changes at the another portable computer (the palm-held device can transmit maps and other related information to other palm-held devices) (Barnard: column 5, lines 21-30, column 6, lines 34-37, and column 16, lines 51-67 through column 17, lines 1-30).

Referring to claims 52 and 87, Skidmore et al., as modified, teach measuring performance measurements or metrics within the physical environment or providing computation feedback associated with the portable computer (simulating the floor plan to measure predicted coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4), and inputting performance measurements or metrics into at least the portion of the computer generated model (inputting performance measurements, or parameters, such as "Transmit Power", "RF Frequency", etc. for base stations and interference sources on the floor plan) (Skidmore et al.: paged 26-29, section 5.3 and Figure 5.4) in the portable computer (Barnard: column 5, lines 21-30, column 6, lines 34-37 and column 16, lines 51-67 through column 17, lines 12-15).

Referring to claim 54, Skidmore et al., as modified, teach an uploading device for uploading the performance measurements or metrics (such as component parameters and simulated coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4) from the portable computer to the server or another client (uploading maps and map-related information from the palm-held device to other palm-held devices or a remote server) (Barnard: column 5, lines 21-30 and column 16, lines 51-67 through column 17, lines 1-30).

Referring to claims 55 and 90, Skidmore et al. teach at least one of the steps of updating, logging, storing, or archiving at the server the performance measurements or metrics (the user can edit, or update the performance parameters of base stations and interference sources, such as "Transmit Power", "RF Frequency", etc.) (Skidmore et al.: paged 26-29, section 5.3 and Figure 5.4).

Referring to claims 56 and 91, Skidmore et al., as modified, teach downloading at least an updated portion of the computer generated model from the server to the portable computer (the palm computer can transmit collected maps to a web server and then download the updated map from the web server to the palm computer) (Barnard: column 12, lines 15-62 and column 16, lines 51-67 through column 17, lines 1-30).

Referring to claim 57, Skidmore et al., as modified, teach the server or the at least one portable computer can transmit either or both (the palm-held computers and remote servers can transmit, via uploading and downloading, maps and map-related information to and from each) (Barnard: column 5, lines 21-30 and column 16, lines 51-67 through column 17, lines 1-30) predicted or measured performance measurements or metrics (such as component parameters and simulated coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4).

Referring to claims 58 and 93, Skidmore et al., as modified, teach a means for inputting changes to at least a portion of the computer generated model (users can add/delete reposition and change the parameter values of the base stations and interference sources on the floor plan) (Skidmore et al.: page 9 and Figure 5.4) with the at least one portable computer (the palm-held portable device downloads and edits a map) (Barnard: column 5, lines 21-30 and column 6, lines 34-37).

Referring to claims 59 and 94, Skidmore et al teach the step of editing the changes (users can add/delete/reposition and use the dialog box to edit the parameter values of the base stations and interference sources numerous time until the are satisfied with the values) (Skidmore et al.: page 9 and Figure 5.4).

Referring to claims 60 and 95, Skidmore et al., as modified, teach at least one portable computer (Barnard: column 5, lines 21-30, column 6, lines 34-37 and column 16, lines 51-67 through column 17, lines 12-15) performs at least one of performance prediction, performance analysis or comparisons of measured or predicted data, analysis of cost data of components or network infrastructure, and determination of locations of physical objects or equipment (perform simulation of the floor plan to predict performance such as coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5 and pages 29-32, section 5.4).

Referring to claims 61 and 96, Skidmore et al., as modified, teach an uploading device for uploading change to the server or servers or to another portable computer (the palm-held portable device provides capabilities to download, edit and upload maps from and to other computers, such as remote servers) (Barnard: column 5, lines 21-30, column 6, lines 34-37, and column 16, lines 51-67 through column 17, lines 1-30).

Referring to claims 62 and 97, Skidmore et al. teach at least one of a display or storage device for displaying or storing, respectively, the changes at either the server or the portable computer or another portable computer (the computer displays changes by the user on the computer, modifying the display of base stations and interference sources on the floor plan in response to user's adding/deleting/repositioning of the corresponding components) (Skidmore et al.: page 9 and pages 21-22, section 4.4).

Referring to claims 63 and 98, Skidmore et al., as modified, teach the steps of uploading and downloading operate in real time (Barnard: column 6, lines 34-42 and column 17, lines 62-67 through column 18, lines 1-2).

Referring to claims 64 and 99, Skidmore et al., as modified, teach the communication of simulation or prediction or measurement data (such as component parameters and simulated coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4) occurs through one of a docking cradle connection, a wireless connection, a wired connection, and via electronic mail (transfer maps via a wireless RF link to directly connect to the Internet) (Barnard: column 12, lines 40-47).

Referring to claims 65 and 100, Skidmore et al., as modified, teach the at least one portable computer includes a plurality of portable computers, and wherein either or both predicted or measured performance measurements or metrics may be transmitted between the server or servers and the plurality of portable computers (the maps and map-related information can be transmitted, via uploading and downloading to and from the remote server to a plurality of palm-held computers) (Barnard: column 5, lines 21-30, column 6, lines 34-37, and column 16, lines 51-67 through column 17, lines 1-30; this is further shown in Figure 2), and the computer generated model is updated based on the predicted or measurement performance measurements or metrics (when the floor plan is simulated, the computer model of the floor plan is updated with the display of predicted coverage contours) (Skidmore et al.: pages 23-24 and 29-32 and further shown in Figure 5.9).

Referring to claims 68 and 103, Skidmore et al., as modified, teach a cost of a communication network component may be tracked, shared, revised, or substituted in the computer generated model with either or both the server computer or computers and the at least one portable computer (the position determined by the position module in the palm-held device

may be altered by the position module chosen by the user; the user may choose, or substitute various levels of cost of the position module) (Barnard: column 9, lines 42-58).

Referring to claims 69 and 104, Skidmore et al. teach a performance attribute of a communications network component may be tracked, shared, revised, or substituted (tracking and displaying a performance attribute, such as the coverage contour, of a base station or interference source) (Skidmore et al.: pages 9, 23 and 29-32, and further shown in Figure 5.9).

Referring to claims 70 and 106, Skidmore et al. teach a maintenance record may be tracked, shared, revised or substituted (maintaining and allowing users to revise a record, or set of parameters associated with a base station or interference source) (Skidmore et al.: page 9 and Figure 5.4).

Referring to claims 71 and 105, Skidmore et al. teach a location of a communication network component may be tracked, shared, revised or substituted (users can revise, or reposition a base station or interference source) (Skidmore et al.: page 9).

Referring to claims 74 and 109, Skidmore et al. teach a plurality of floor plans for one or more floors for one or more buildings (a plurality of floors plans, i.e. the floor plans of a plurality of floors of a building, can be viewed at once) (Skidmore et al.: page 21, section 4.3),

Referring to claims 75 and 110, Skidmore et al. teach a selecting device which operates with the server or portable computer, which selects one or more floor plans and one or more buildings for display, measurement or prediction operations (the user can select any environment type, such as buildings and floor plans, by moving between different floors) (Skidmore et al.: page 10 and pages15-17, section 3.4).

Referring to claims 79 and 114, Skidmore et al., as modified, teach an identifier for identifying a location of the at least one portable computer within the physical environment (the palm-held portable device provides GPS location tracking features using a Position Module) (Barnard: column 5, lines 21-30 and column 12, lines 1-40).

Referring to claims 80 and 117, Skidmore et al., as modified, teach a position tracking or locationing device (the palm-held portable device provides GPS location tracking features using a Position Module) (Barnard: column 5, lines 21-30 and column 12, lines 1-40).

Referring to claims 82 and 119, Skidmore et al. teach the representation is represented as a series of two dimensional representations (two dimensional representations of floors of a floor plan can become a three-dimensional representation by adjusting the height parameter, such as ceiling height, height above floor, etc., from zero to some height value, thus giving the representation a third dimension) (Skidmore et al.: page 10 and Figure 5.4).

Referring to claims 83 and 120, Skidmore et al., as modified, teach an un-manned measurement device for making measurements in the physical environment and means for uploading the measurements to the server for updating the computer generated model (the system automatically measures the distance between the aircraft and the ground to provide the current position in real-time) (Barnard: column 16, lines 1-47).

Referring to claims 84 and 121, Skidmore et al. teach the computer generated model includes at least one of objects in a building or their locations, communications component data and their location, building information or properties, radio propagation properties, bill of materials data, environmental data, cost data, and asset management data (the floor plan displays

objects such as base stations or interference sources at a particular location on the floor plan) (Skidmore et al.: page 2, second paragraph).

Referring to claim 86, Skidmore et al. teach the step of displaying is performed on the server computer (the computer running the SMT Plus programs loads and displays a floor plan of the building) (Skidmore et al.: pages 2 and 20).

Referring to claim 92, Skidmore et al., as modified, teach either or both steps of uploading and downloading transmits either or both predicted or measured performance measurements or metrics (such as component parameters and simulated coverage contours) (Skidmore et al.: page 9, pages 23-24, section 4.5, pages 29-32, section 5.4) to or from the server or the at least one portable computer (uploading and downloading map and map related information between the server and the portable computer) (Barnard: column 5, lines 21-30 and column 6, lines 17-37).

Referring to claim 115, Skidmore et al., as modified, teach the identifying step is performed automatically (the GPS location features for identifying position is automatically available) (Barnard: column 12, lines 26-31 and column 16, lines 1-27).

Referring to claim 116, Skidmore et al. teach the identifying step is performed on demand (when the user simulates the floor plan, the location of the base stations are identified to determine which propagation model to apply on the calculation of the coverage contours) (Skidmore et al.: page 23).

3. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider

these references fully when responding to this action. The documents cited therein teach similar methods of transmitting computerized maps and models of networks between client server systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ting Zhou whose telephone number is (703) 305-0328 through the month of October, 2004 and (571) 272-4058 thereafter. The examiner can normally be reached on Monday - Friday 8:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca can be reached at (703) 308-3116 through the month of October, 2004 and (571) 272-4048 thereafter. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-8720 through the month of October, 2004 and (571) 273-4058 thereafter.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

28 September 2004

CAO (KEVIN) NGUYEN
PRIMARY EXAMINER